REMARKS

Status of the claims:

With the above amendments, claims 7, 10, 11, and 12 are amended and claims 15-17 have been added. Thus, claims 7, 8, 10, 11, 12, and 15-17 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. The claims have been amended mostly for form and to recite all of the paper quality improving properties. Claim 12 has been made independent. New claim 15 has support from original claim 1 and at page 26, lines 1-7. New claim 16 has support from original claim 1 and at page 24, lines 7-10. New claim 17 has support at original claim 1 and at page 26, lines 1-7. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §103

Claims 7, 8, and 10-12 are rejected under 35 USC §103(a) as being unpatentable over Bonin '703 (DE 42 02 703 A1) in view of Smigo '553 (US Patent No. 5,232,553) or Oriaran '607 (US Patent No. 5,695,607).

This rejection is traversed for the following reasons.

Present Invention

The present invention, as recited in claim 7, relates to a method for producing a pulp sheet comprising the steps of

1) taking a composition for improving paper making quality wherein said composition comprises a compound and a pulp blend, wherein

said pulp blend contains a deinked pulp in an amount of 10% or more by weight in a material pulp and

said compound has a lyotropic degree as defined below of not less than 4%, and

said compound provides the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm^3,

(ii) a standard improved brightness of at least 0.5 point, and

(iii) a standard improved opacity of at least 0.5 point;

and wherein the

lyotropic degree (%) = $(\alpha_0 - \alpha) / \alpha_0 \times 100$

wherein

α is the water content in a wet sheet obtained by adding 5 parts by weight of the compound to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and

α_0 is the water content in a wet sheet obtained by subjecting the pulp blend to papermaking without adding the compound to the pulp blend and

2) adding the compound to the material pulp before or during the papermaking step and

3) producing a pulp sheet.

Disclosure of Bonin '703

Bonin '703 discloses a method of rendering paper and paper-like materials porous and of increasing their volume, using alkoxylation products of unsaturated fatty acid esters, as well as paper and paper-like materials containing such alkoxylation products.

Bonin '703 fails to disclose paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm^3,

(ii) a standard improved brightness of at least 0.5 point, and

(iii) a standard improved opacity of at least 0.5 point.

Disclosure of Smigo '553

Smigo '553 discloses polyvinylaminals, optionally as the formed copolymer with polyvinyl hemiaminals, and polyvinyl acetals that are added to a papermaking pulp slurry to improve

the retention of fines in the final paper product. The polymer of Smigo '553 is provided by reacting a poly(vinylamine) which can be a homopolymer or a copolymer containing vinyl alcohol and vinyl amine units with a monoaldehyde. The aldehyde, such as butyraldehyde, modifies the structure of the polymer and increases its hydrophobicity. The use of these polymers in papermaking involving the recycle of waste papers is said to provide advantages in fines retention because of the high level of fines which normally accompany such recycle paper waste.

Disclosure of Oriaran '607

Oriaran '607 discloses a one-ply paper tissue product and a method of making a one-ply paper product combining high strength and softness along with low sidedness. The paper tissue product in Oriaran '607 exhibits a sidedness parameter of less than 0.3 preferably, less than 0.225, a tensile modulus of no more than 32 grams/percent strain, a GM MMD of no more than about 0.225, and a cross directional strength of at least 200 grams per 3 inches. In the stratification tissues of Oriaran '607, these properties are obtained by control of stratification, particularly, chemical stratification and stratification of furnish when appropriate. The tissue has a sidedness parameter value of less than 0.3, preferably, about 0.15 to about less than 0.225. In the homogenous tissue of Oriaran '607, these properties are obtained

by adding a strength enhancing agent to separate furnish sources prior to the furnish sources being combined, and further, optionally adding the softener to the nascent web.

Removal of the Rejection over Bonin '703 in view of Smigo '553 or Oriaran '607

Applicants have amended several of the claims so that the paper quality improving properties (i) to (iii) are satisfied:

(i) a standard improved bulky value of at least 0.02 g/cm^3,

(ii) a standard improved brightness of at least 0.5 point, and

(iii) a standard improved opacity of at least 0.5 point. The other claims have two of three quality improving properties, these properties being

(i) a standard improved bulky value of at least 0.02 g/cm^3,

(ii) a standard improved brightness of at least 0.7 point, and

(iii) a standard improved opacity of at least 0.7 point.

Applicants point out that none of Bonin '703, Smigo '553, and Oriaran '607 disclose or suggest either of these possible combinations. As a matter of fact, the paper that is disclosed in Bonin '703 falls completely outside the scope of these elements in the instantly claimed invention.

Attached to this reply, please find a 37 CFR §1.132 declaration wherein the results of the paper of Bonin '703 are compared to the paper produced in the instant invention. For the Examiner's convenience, the results from the 37 CFR §1.132 declaration are reproduced in Table 1 below.

Table 1.

Compound	standard improved bulky value	standard improved brightness	standard improved opacity	lypotropic degree
Claimed in claim 7	at least 0.02 g/cm^3	at least 0.5 point	at least 0.5 point	not less than 4%
Claimed in claims 15	at least 0.02 g/cm^3	at least 0.7 point	at least 0.7 point	not less than 4%
Present Invention	0.028 g/cm^3	1.36 point	1.70 point	5.6 %
Bonin A	0.003 g/cm^3	0.09 point	-0.13 point	-1.9%
Bonin B	0.008 g/cm^3	0.10 point	0.34 point	7.5 %
Bonin C	0.009 g/cm^3	0.73 point	0.27 point	15.3%
Bonin D	0.004 g/cm^3	0.88 point	0.66 point	7.6%

The present invention uses pentaerythritol stearate with an average ester replacement of 45%.
Bonin A uses Soybean oil E04mol.
Bonin B uses Soybean oil E09mol.
Bonin C uses Caster oil E010mol.
Bonin D uses Caster oil E030mol.

All of the examples disclosed in Bonin '607 were reproduced (please see the Examples on page 4 in the translation of Bonin '607) and the data from these experiments are produced in the above table. As can be seen from this table, only the Bonin D paper meets two of the three quality improving elements claimed in claim 7, and only one of the claimed elements in claim 15. Bonin A and Bonin B are completely outside the scope of the claimed elements in claim 7 and claim 15. Bonin C has only one

element that falls within the scope of claims 7 and 15. Thus, Bonin '607 does not disclose or suggest the instantly claimed invention.

Smigo '553 and Oriaran '607 fail to make up the deficiencies in Bonin '607. The Examiner asserts that Smigo '553 and Oriaran '607 are cited for the purpose of showing that deinked pulp is conventionally used to make paper in amounts as claimed. Thus, this teaching would have no effect on the above recited results.

Moreover, the instant invention has unexpectedly superior properties over the disclosure of Bonin '607. For this reason and the reasons advanced above, the rejection is inapposite. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a two (2) month extension of time for filing a response in connection with the

present application. The required fee of $410.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
John W. Bailey, #32,881

JWB/TBS/mua

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000